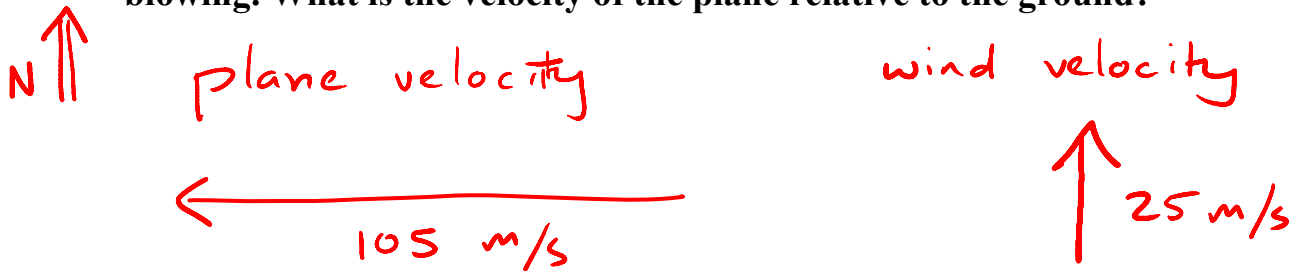
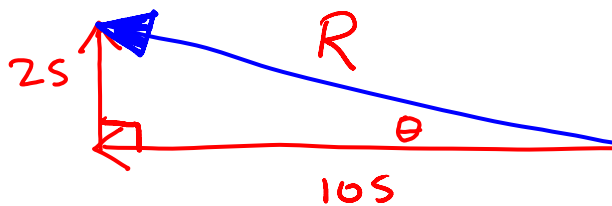


Example 4.

A plane with an air speed of 105 m/s heads west when a 25 m/s north wind is blowing. What is the velocity of the plane relative to the ground?



To find resultant velocity, vector add
plane velocity + wind velocity:



$$R = \sqrt{105^2 + 25^2} = 108 \text{ m/s}$$

$$\theta = \tan^{-1} \left[\frac{25}{105} \right] = 13^\circ$$

Answer: 108 m/s @ 13° N of W